



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

# SCIENCE

EDITORIAL COMMITTEE: S. NEWCOMB, Mathematics; R. S. WOODWARD, Mechanics; E. C. PICKERING, Astronomy; T. C. MENDENHALL, Physics; R. H. THURSTON, Engineering; IRA REMSEN, Chemistry; J. LE CONTE, Geology; W. M. DAVIS, Physiography; O. C. MARSH, Paleontology; W. K. BROOKS, C. HART MERRIAM, Zoology; S. H. SCUDDER, Entomology; C. E. BESSEY, N. L. BRITTON, Botany; HENRY F. OSBORN, General Biology; C. S. MINOT, Embryology, Histology; H. P. BOWDITCH, Physiology; J. S. BILLINGS, Hygiene; J. MCKEEN CATTELL, Psychology; DANIEL G. BRINTON, J. W. POWELL, Anthropology.

FRIDAY, MAY 20, 1898.

## CONTENTS:

<i>A Precise Criterion of Species:—</i>	
A. <i>The General Method:</i> PROFESSOR C. B. DAVENPORT.....	685
B. <i>The Chief Differential and Specific vs. Individual Characters:</i> J. W. BLANKINSHIP.....	690
Julius Sachs (II): PROFESSOR K. GOEBEL.....	695
<i>The Breeding of Animals at Woods Holl during the Month of April, 1898:</i> A. D. MEAD.....	702
<i>Current Notes on Physiography:—</i>	
<i>The Origin of Puget Sound; The Plains of Russia; Tidal Problems:</i> PROFESSOR W. M. DAVIS.....	704
<i>Current Notes on Anthropology:—</i>	
<i>31st Peabody Museum Report; The Aims of Ethnology; The Araucanian Tongue:</i> PROFESSOR D. G. BRINTON.....	706
<i>Notes on Inorganic Chemistry:</i> J. L. H.....	707
<i>Scientific Notes and News:—</i>	
<i>Civil Service Examinations in Science; Museums of the Science and Art Department, London; Observatories on the Azores; General.....</i>	708
<i>University and Educational News .....</i>	712
<i>Discussion and Correspondence:—</i>	
<i>Remarks on the Method of the 'New Psychology' with Memory:</i> HIRAM M. STANLEY. <i>The Causes of Natural Arches:</i> F. S. DELLENBAUGH.....	713
<i>Scientific Literature:—</i>	
<i>Wilder's System of Nomenclature:</i> PROFESSOR FRANK BAKER. <i>Barringer's Description of Minerals:</i> PROFESSOR W. S. BAYLEY.....	715
<i>Scientific Journals .....</i>	717
<i>Societies and Academies:—</i>	
<i>American Mathematical Society:</i> PROFESSOR F. N. COLE. <i>The Philosophical Society of Washington:</i> E. D. PRESTON. <i>New York Section of the American Chemical Society:</i> DR. DURAND WOODMAN. <i>Academy of Natural Sciences of Philadelphia:</i> DR. EDWARD J. NOLAN .....	718
<i>New Books .....</i>	720

MSS. intended for publication and books, etc., intended for review should be sent to the responsible editor, Prof. J. McKeen Cattell, Garrison-on-Hudson, N. Y.

## A PRECISE CRITERION OF SPECIES. \*

A. *The General Method.* By C. B. DAVENPORT, Harvard University.

THE aim of this paper is to propose a definite method of judging whether two closely allied and intergrading groups of organisms belong to distinct species or only to subspecies or varieties.

I. *The Present Criteria of Species.* The practical criteria employed at the present time to distinguish a species from a variety are either one of the two following: 1. A certain considerable degree of dissimilarity in characters—of divergence between the types. 2. A sharp demarcation between the types, their mutual isolation, or, in other words, the absence of intergrading forms. Of these two criteria, that of divergence is most generally employed; yet one influential body—The American Ornithologists' Union—adopts the second in a strict form. Its remarkable rule reads: "Forms known to intergrade, no matter how different, must be treated as subspecies; forms not known to intergrade, no matter how closely related, must be treated as full species." This clear cut rule does not seem however to have been worked in practice.† Nearly all naturalists, indeed, recognize a

\*Read before the Boston Society of Natural History, April 6, 1898.

†See, for example, the discussion by Merriam, Allen and Roosevelt in SCIENCE, Vol. V., pp. 753, 877 and 879.